

# Effect of the level of general self-efficacy of primipara prior to delivery to one month after delivery towards her psychological characteristic

Sumi Misawa<sup>1</sup>, Seiko Oe<sup>2</sup>, Naomi Saimon<sup>3</sup>, Yumiko Endo<sup>4</sup>

Key words : primipara, general self-efficacy, psychological characteristic, helplessness

## Abstract

This is to study the effect of general self-efficacy of primipara in between the late period of pregnancy and one month after delivery, regarding depression, helplessness, subjective feelings of health, and motherly feeling of attainment, all of which will be referred to as psychological characteristic, and to discuss the nursing support for one month primipara. We obtained agreement for three question-answer sessions from 34 primiparas we traced during the period. We questioned them about their background, their general self-efficacy and their psychological characteristic which was compared with groups of high and low self efficacy. The obtained results indicated that the high group showed less helplessness after delivery relative to the low group, suggesting the possibility that the level of general self-efficacy influences their helplessness.

## Introduction

Self efficacy is the recognition of capability to perform a necessary act in the face of a certain condition. It has been pointed out that the amount of self efficacy one has in facing questions and problems can indicate alteration of behavior and make one deviate from unsuitable behavior<sup>1)</sup>. In fact, the contribution of self efficacy to eliminate helplessness and depression in problem solving

has been reported in clinical and/or educational scenarios<sup>2),3)</sup>. Relative to such self efficacy which is useful for problem solving, there is other level of self efficacy that influences our daily and general behavior and this is called general self-efficacy<sup>4)</sup>.

Various events and unexpected problems occur during a long period of nurturing a child. Mothers must properly approach and solve these problems continuously. It has been reported that mothers feel strain to raise children and show a tendency toward uneasiness or depression, a negative psychology. The self efficacy of a mother with an infant is related to the burden of childcare and the support for that. Especially, during her early puerperium stage when a mother is unfamiliar with childcare and communication with her baby, mother's recognition of signals from a new born is not sufficient and the repeated demands of childcare of baby may make a mother feel helpless because of her lack of knowledge.

The following has been noted: Lower self efficacy enhances psychological depression. Self efficacy is related to how one accepts and understands ones own psychological and physical reactions. Furthermore, feelings and confidence towards child care changes day by day, especially puerperium show a tendency to reduce confidence level temporarily at around one month after delivery. Motherly confidence will grow together

<sup>1</sup> Corresponding author. Department of Nursing, School of Health Science, Niigata University of Health and Welfare. Shimami-cho, Niigata-shi 950-3198, Japan

Email: [misawa@nuhw.ac.jp](mailto:misawa@nuhw.ac.jp) Tel./Fax.: 81-25-257-4562

<sup>2</sup> Yokohama Asahi Central General Hospital

<sup>3</sup> Hakodate Central General Hospital

<sup>4</sup> School of Nursing, Yamagata University Faculty of Medicine

with her recognition of her own capacity to recognize baby's response and changes. Thus, it is conceivable that her achievement as a mother will influence her self efficacy. To understand whether a mother understands how to perform and solve problems of childcare with little experience, measurements of her self efficacy to a certain problem and temporary psychological condition are not sufficient but also measurements of general self-efficacy and continued observation of psychological condition are required.

However, few reports are available on the general self-efficacy of puerperium during pregnancy and shortly after delivery and the facts and related events remain to be studied. This paper reports on the effects of general self-efficacy level, that is a characteristic of puerperium, between the third trimester of pregnancy to one month after delivery, on her psychological nature toward child care during such a period.

## Methods

### 1. Subjects

Forty puerperium in a general hospital in A prefecture who agreed to this research of 3 surveys and maintenance of the contacts from the third trimester of pregnancy (within 36th to 40th week) till one month after delivery, were considered as the subjects. Among the above, six were removed as study subjects: 3 subjects with caesarian operation and/or failure to lactate baby within 90 minutes due to difficulties during and after delivery, 1 subject admitted in NICU, 1 subject who changed to completely artificial milk and 1 subject found to be depressed, totaling 6. Finally 34 study subjects were examined.

From ethical consideration, we explained the following orally and on paper before asking for an agreement signature: The object of research, freedom to join or resign from the study, absence of the disadvantage after resignation,

that the data collected would be used only for this research, and that individual subject's name would be kept anonymous. A confirmation was made at every interview and survey.

### 2. Content of survey

1) Survey of the back ground of each subject was taken orally and from her medical record about the following: age, profession, family structure, school career, experience about child contact, miscarriage, treatment for pregnancy, pregnancy, delivery, childbed, pregnancy complications, bleeding at delivery, delivery in the presence of her husband, new baby's weight, sex, and abnormality at or after birth.

#### 2) Survey by questionnaire

##### (1) General self-efficacy scale (GSES)

The scale was established to measure the strength of general self-efficacy by Sakano et al.<sup>4)</sup>. This consists of 16 items with numerical points from 0 to 16, the higher the number, the stronger the self-efficacy.

##### (2) Beck Depression Inventory-I (BDI-I)<sup>5)</sup>

This is a scale measuring depression modified by Hayashi, eliminating 5 items from the original inventory (BDI) of 21 items. This scale consists of 16 items and is scored by a 4 item method. Each item is scored from 0 to 3, and the total score will be from 0 to 48, the higher the score, the stronger depression tendency is.

##### (3) Helplessness Scale<sup>6)</sup>

This is a scale measuring depression as a personal characteristic, which consists of 4 levels of health, derived from the model of helplessness by Aoyagi. It consists of 44 items, each of them scored from 1 to 5 points, totaling from 44 to 220 points. The higher the score, the deeper the helplessness.

##### (4) Self evaluation of subjective health

feeling

This is a scale for self evaluation of health with 4 levels modified by researchers referring to Haga et al.

(5) Achievement scale for mother's role <sup>7)</sup>

This was prepared by Doi et al. to measure a mother's satisfaction about human relations with child and the growth of herself. It consists of 10 items of 5 points each, and thus a total from 10 to 50 points. A higher score means stronger sense of achievement.

### 3. Procedure of survey

- 1) Third trimester of pregnancy (from 36<sup>th</sup> to 40<sup>th</sup>, week).

Pregnant women visiting a hospital for obstetric health examinations were asked to answer the questionnaire in waiting. The answers were collected right after.

- 2) 5 days after delivery and immediately before discharge.

A questionnaire was given 5 days after delivery and the answers were collected.

- 3) One month after delivery.

A home visit was carried out between 29 and 42 days after delivery. A questionnaire was collected and answers were recorded. The duration of data collection was from June 2001 to September 2001.

### 4. Analysis

Based on the standard GSES score of adult woman,  $9.121 \pm 3.929$  <sup>8)</sup>, scores above 9 and less than 8 were grouped as high score and low score, respectively. Analysis was carried out based on grouping, GSES, DBI-I, helplessness, subjective health, and the scores of mother's role achievement on each survey. Verification of the score was carried out according to time lapse and an order based on difference of score was performed following Wilcoxon signed rank test. Verification of ratio between two independent

group was carried out using the U-test of Mann-Whitney, and the Student t-test.

Analysis was carried out by statistics software SPSS 10.0 J for Windows and meaningful level was set to less than 5%. A level of less than 10% was considered to be the presence of the tendency.

## Results

1. The effect of general self-efficacy on other psychological characteristics by comparing GSES high score group and the low score group.

- 1) Comparison of attributes between high GSES score and low score groups.

Table 1 shows the actual scores and percentages of both groups with regard to obstetric factors, factors related with infant and social factors.

- (1) Obstetric factors

There was no meaningful statistic difference between the two groups in average age, miscarriage, abnormality during pregnancy, treatment for sterility, method of delivery, time required for delivery, bleeding in delivery and the presence of her husband.

- (2) Infant factors

A meaningful statistic difference between the GSES high score group ( $3180.4 \pm 254.7$  g) and the low score group ( $2871.5 \pm 265.5$  g) ( $p < 0.05$ ) was seen. No difference was found with regard to sex, trouble during newborn stage, and nutritional factors.

- (3) Social factors

No meaningful statistic difference was found in family structure, school career, work in past and at present, and contact experience with infant.

- 2) The change of scores of each item comparing between high GSES score and low score groups (Figs.1 to 5).

**Table1. Comparison of attributes between GSES high score group and low score group**

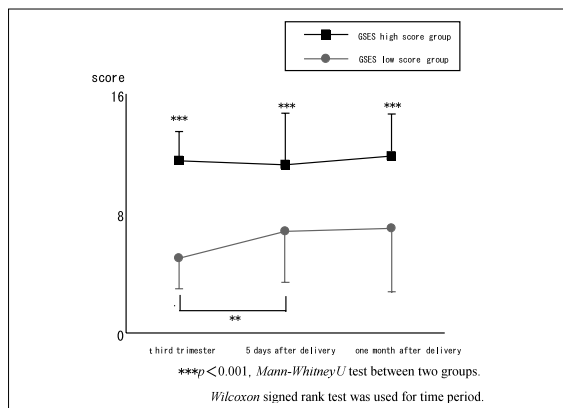
			GSES high score group (N=19)	GSES low score group (N=15)	test
			Mean±SD number (%)	Mean±SD number (%)	
Obstetric factor	Age		28.0±4.7	25.3±3.8	N.S.
	Abortion	Yes	4 (21.1%)	2 (13.3%)	N.S.
		No	15 (78.9%)	13 (86.7%)	
	Abnormality during pregnancy	Yes	15 (78.9%)	12 (80.0%)	N.S.
		No	4 (21.1%)	3 (20.0%)	
	Fertility care	Yes	2 (10.5%)	1 (6.7%)	N.S.
		No	17 (89.5%)	14 (93.3%)	
	Delivery method	Normal	17 (89.5%)	13 (86.7%)	N.S.
		Vacuum extraction	2 (10.5%)	2 (13.3%)	
	Time record for delivery (min.)		686.8±518.1	813.6±476.4	N.S.
	Bleeding amount (g)		521.8±309.2	688.5±354.9	N.S.
Infant factor	Presence of husband	Yes	9 (47.4%)	7 (46.7%)	N.S.
		No	10 (52.6%)	8 (53.3%)	
	Sex	male	9 (47.4%)	9 (60.0%)	N.S.
		female	10 (52.6%)	6 (40.0%)	
	Weight at birth (g)		3180.4±254.7	2971.5±265.5	*
	Difficulty at new born	Yes	3 (15.8%)	4 (26.7%)	N.S.
		No	16 (84.2%)	11 (73.3%)	
	Feeding during one month	only breastfeeding	17 (89.5%)	13 (86.7%)	N.S.
		mixed feeding	2 (10.5%)	2 (13.3%)	
Social factor	Family	single family	11 (57.9%)	9 (60.0%)	N.S.
		multi family	8 (42.1%)	6 (40.0%)	
	Education	University graduate	2 (10.5%)	1 (6.7%)	N.S.
		College graduate	5 (26.3%)	5 (33.3%)	
		High school graduate	6 (31.6%)	7 (46.7%)	
		Vocational school graduate	6 (31.6%)	2 (13.3%)	
	Professional experience, past and current				
		Nursery, Teacher	3 (15.8%)	1 (6.7%)	N.S.
		Medical care specialist	3 (15.8%)	2 (13.3%)	
		Others	13 (68.4%)	12 (80.0%)	
	Contact experience				
		No	0	2 (13.3%)	N.S.
		Yes	6 (31.6%)	4 (26.7%)	
		played together	5 (26.3%)	4 (26.7%)	
		play and care experience	8 (42.1%)	5 (33.3%)	

\* $p < 0.05$ , Student  $t$ -test

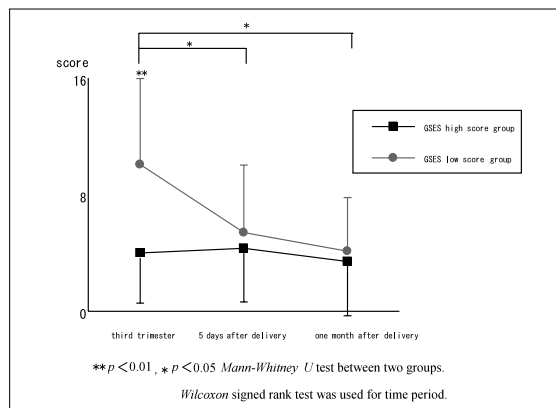
## (1) GSES (Fig.1)

The scores of high GSES group were  $11.5 \pm 2.0$  in the third trimester of pregnancy,  $11.3 \pm 3.5$  at 5 days after and  $11.8 \pm 2.8$  at one month after delivery. A meaningful statistic difference was not found concerning these 3 points.

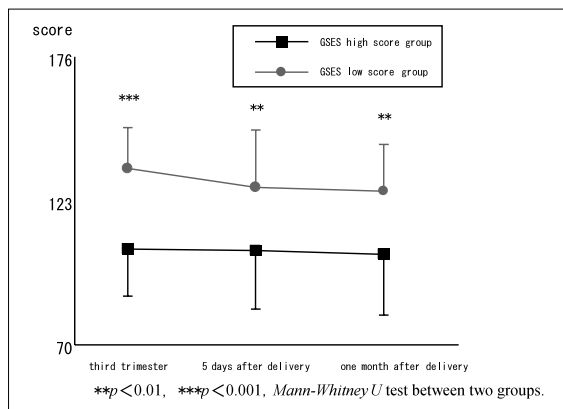
The scores of low GSES group were  $5.0 \pm 2.0$  in the third trimester of pregnancy,  $6.8 \pm 3.4$  at 5 days after and  $7.0 \pm 4.2$  at one month after delivery. A meaningful statistic difference was found on GSES scores in the third trimester of pregnancy and 5 days after delivery. ( $p < 0.01$ ).



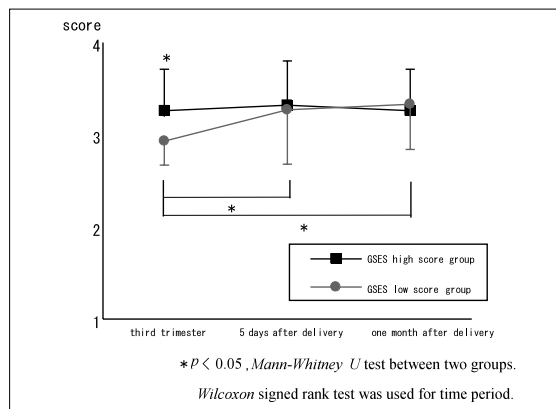
**Fig.1 Comparison of GSES average score between two groups**



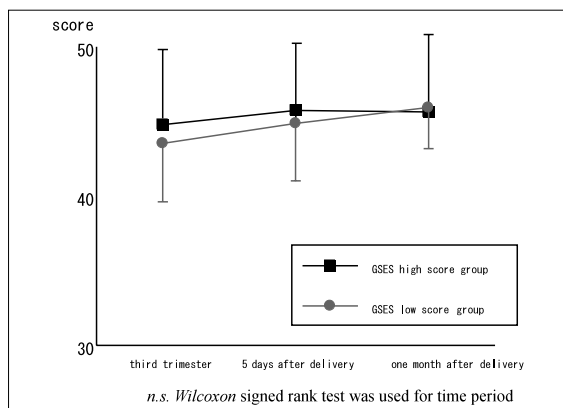
**Fig.2 Comparison of BDI-I average score between two groups**



**Fig.3 Comparison of Helplessness average score between two groups**



**Fig.4 Comparison of average score of subjective health feeling between two groups**



**Fig.5 Comparison of average score of achieving feeling of mother's role between two groups**

(2) BDI-I (Fig.2).

The scores of high GSES group were  $4.0 \pm 3.4$  in the third trimester of pregnancy,  $4.3 \pm 3.7$  at 5 days after and  $3.4 \pm 3.7$  at one month after delivery. No meaningful statistic difference was found concerning these 3 points.

The scores of low GSES group were 10.7±5.9 in the third trimester of pregnancy, 5.4±4.6 at 5 days after and 4.1±3.7 at one month after delivery. A meaningful statistic difference was found in BDI-I

score between the third trimester of pregnancy and 5 days after delivery, and between the third trimester of pregnancy and one month after delivery. (both  $p < 0.05$ )

(3) Helplessness ( Fig. 3).

The scores of high GSES group were  $105.3 \pm 17.3$  in the third trimester of pregnancy,  $104.7 \pm 21.6$  at 5 days after delivery, and  $103.4 \pm 22.4$  at one month after delivery. There was no meaningful statistic difference in helplessness at these 3 different periods.

The scores of low GSES group were  $134.9 \pm 15.1$  at the end of pregnancy,  $128.0 \pm 21.1$ , and  $126.6 \pm 17.2$  at one month after delivery. There was no meaningful statistic difference at these 3 points.

(4) Subjective health feeling ( Fig.4).

The scores of high GSES group were  $3.3 \pm 0.5$  in the third trimester of pregnancy,  $3.3 \pm 0.5$  both at 5 days and at one month after delivery. There was no meaningful statistic difference at these three points.

The scores of low GSES group were  $2.9 \pm 0.3$  in the third trimester of pregnancy,  $3.3 \pm 0.6$  at 5 days after and  $3.3 \pm 0.5$  at one month after delivery. There were meaningful statistic differences between third trimester of pregnancy and 5 days after delivery and between third trimester of pregnancy and one month after delivery (both  $p < 0.05$ ).

(5) Feeling of achieving mother's role ( Fig 5).

The scores of high GSES group were  $44.8 \pm 5.0$  in the third trimester of pregnancy,  $45.7 \pm 4.4$  at 5 days after and  $45.6 \pm 5.2$  at one month after delivery. There was no meaningful statistic difference of score concerning achieving feeling of mother's role.

The scores of low GSES group were  $43.5$

$\pm 3.9$  in the third trimester of pregnancy,  $44.9 \pm 3.9$  after 5 days and  $45.9 \pm 2.8$  at one month after delivery. There was no meaningful statistic difference concerning mother's achieving feeling between these 3 points.

(6) Comparison of psychological scores between the two groups at surveyed periods. ( Figs. 1 to 5).

The following results were obtained by comparing the scores of high GSES and low GSES groups. There was meaningful statistic difference on GSES scores at 3 periods (all  $p < 0.01$ ). There was a difference in BDI-I score in the third trimester of pregnancy ( $p < 0.01$ ).

The scores in helplessness scale showed a difference in all periods (in the third trimester of pregnancy  $p < 0.01$ ), 5 days and one month after delivery ( $p = 0.01$ ).

There was meaningful statistic difference in subjective health feeling in the third trimester of pregnancy ( $p < 0.05$ )

There was no meaningful statistic difference in achievement feeling of mother's role in all 3 periods.

## Discussion

1. We would like to consider the effect of general self-efficacy on psychology through comparison of high GSES score group and low GSES score group.

1) Comparison from grouping.

We grouped by score on GSES based on the score taken before delivery. We found no difference in obstetric factor and social factor. Thus, these groups of subject are suitable when comparing general self-efficacy. On the other hand, a meaningful difference in factors related to child was apparent. This suggests that puerperium with lower GSES score may reacted poorly, based on the report mentioning that general self-efficacy can be a powerful

resource, influencing her immune response to stress, and influencing immune function. It has been suggested that such stress may affect the growth of fetus through interference of blood circulation in the uterus and the placenta.

2) Comparison of GSES scores.

This study showed no meaningful differences of GSES score at 3 different points and that mother with high GSES score did not alter her general self-efficacy regardless of time lapse. On the other hand, puerperium with low GSES score showed difference in the third trimester of pregnancy and 5 days after delivery. This result suggests the possibility of alteration of general self-efficacy of low GSES score may be altered.

3) Comparison of BDI-I scores.

From the comparison of 2 groups, depression of high GSES score mothers shows a peak in the third trimester of pregnancy followed by a gradual decrease, judging by the alteration of BDI-I score over time. On the other hand, depression in mothers with low score having a peak in the third trimester of pregnancy followed by a sudden decrease at 5 days after delivery, indicates an unstable psychological condition in low score mother.

From the difference of scores, it was found that there was a high BDI-I score with low GSES score only in the third trimester of pregnancy. This means that the mother with low score tends to be depressed in the third trimester of pregnancy, Mother's depression in the third trimester of pregnancy should be observed continuously until after her delivery.

4) Comparison of helplessness scores.

Concerning the change of helplessness as time passes, GSES high score group showed very little when comparing the 2 groups. The mothers with high general self-efficacy maintain a constancy with regard to her helplessness through out all stages. The group with low GSES score group also showed no

meaningful difference, meaning a gradual escape out of helplessness. However, in a comparison between the two groups, it was obvious that low score group always had more helplessness. Both general self-efficacy and helplessness may explain mothers' possibility and capability through recognition positively and passively, respectively. Namely, the puerperium with low general self-efficacy has a tendency towards to fall in helplessness in caring for new born.

5) Comparison of the scores of subjective health feeling.

Both high score group and low score group of GSES gradually increased their subjective health feeling. There was no difference of scores except in the third trimester of pregnancy. We have decided that there is no relation between the score of general self-efficacy and the subjective health feeling, except in the third trimester of pregnancy.

6) Comparison of achieving feeling of mother's role.

Comparing the groups through time lapse study of achieving feeling of mother's role, both increased gradually from the third trimester of pregnancy. There is no relation between the level of general self-efficacy and mother's feeling to achievement of motherly function. We have considered that this part of puerperium psychology, under the influence of general self-efficacy that is a part of her personality.

2. Nursing support to puerperium until one month after delivery.

A psychological characteristic of puerperium with high general self-efficacy is a stability at, before, and after delivery. However, the nature of puerperium with low score has a tendency to fluctuate with depression and helplessness. Because general self-efficacy can contribute to eliminating depression and helplessness, it

should be considered that individual care should be planned not only for her psychological condition which changes depending on condition, but also, simultaneously, with an understanding of general self-efficacy which is based on her personality. To be concrete, support for puerperium with low general self-efficacy is indispensable to stimulate a mutual interaction between mother and child. Furthermore, it is necessary for puerperium to experience and realize the achievement, joy and pleasure of birth through demonstrations by nurses and mothers, and to obtain a positive feeling and through linguistic acceptance and compliments from nurses. Intentional support to raise the general self-efficacy of puerperium, to convince her of her capability and to raise her general self-efficacy, and therefore build her motivation to overcome her negative psychology, is conceivable as a required supporting method.

This study shows the following: understanding the relation between a negative psychology and personality, is useful to reduce and solve the negative psychological problems during and after pregnancy and raising a child, by promoting general self-efficacy.

Nurses practice daily care by acting out mother's role, giving compliments and producing a successful experience in handling children. However, few evaluations are available on how such practical care increases mother's potential, motivation and continuation of child raising and how the stimulation of these are effective. It may be necessary to develop nursing methods that reduce and eliminate the mother's negative psychology.

## Conclusion

The group with high general self-efficacy shows less helplessness after delivery, relative to low score group. Thus, support to promote

general self-efficacy of puerperium is indispensable at early puerperium stage and will contribute to elimination of an expected helplessness.

## Acknowledgement

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